



# CENTRAL PACIFIC HURRICANE CENTER TROPICAL CYCLONE REPORT

## TROPICAL CYCLONES 1978

### Central Pacific Hurricane Center

The tropical cyclone summaries for the years between 1832 and 1979 were taken from A History of Tropical Cyclones In the Central North Pacific and the Hawaiian Islands 1832-1979. This Department of Commerce publication was printed in 1981 and authored by Samuel Shaw of the Central Pacific Hurricane Center (CPHC) and the National Weather Service Forecast Office in Honolulu, Hawaii.

### JUNE 24-26, 1978 (BUD)

The Central North Pacific season began with BUD, which had been a tropical storm east of longitude 140W. Remnants of BUD reached 14N 14W, as a tropical disturbance, then abruptly turned southwestward and died in the Intertropical Convergence Zone (ITCZ) on June 26.

### JUNE 26 - JULY 3, 1978 (CARLOTTA)

The ex-hurricane passed across 19N 140W, and proceeded nearly straight westward along 20N. The center of the vortex passed over the Alenuihaha Channel between the Big Island of Hawaii and the island of Maui on June 28. During its travel across the length of the island chain it produced heavy rainfall over much of the area north of the center, but there was no appreciable increase in windspeeds. Rainfall amounts in many areas were as high as 6 inches (152 mm), especially over the island of Oahu. As far as the Hawaiian public was concerned, CARLOTTA was one of the major weather producers of the season.

CARLOTTA's remnants continued to be clearly identifiable as a tropical disturbance on GOES-3 imagery as the storm proceeded westward. It was tracked to longitude 170E, where it merged with a cold LOW aloft. It continued to move westward to near Marcus Island (24N, 154E) on July 10.

## JULY 3-11, 1978 (DANIEL)

On July 3, the same day that the remains of CARLOTTA left the Central North Pacific, ex-hurricane DANIEL entered the eastern side of the area at 16N also as a tropical disturbance. This vortex moved westward (like that of CARLOTTA but on a slightly more southerly track) across the entire Central North Pacific between latitudes 16N and 17N. Definite dissipation of the vortex did not occur until it approached 19N 171E, on July 12. On July 6 the cloud mass, showers, and thunderstorms accompanying the vortex encompassed nearly 180,000 square miles and was of much concern to aviation and shipping interests. At this time the Honolulu forecast staff anticipated another episode of heavy rainfall over the entire island chain. Windward sections of the Big Island and Maui did receive 5 to 7 inches of rain from ex-DANIEL, but rainfall over windward and mountain sections of the other islands was quite spotty and generally under the 2-inch mark. The well-structured, massive weather pattern associated with ex-hurricane DANIEL was broken up by the "barrier effect" of the Hawaiian Islands. Resultant divergent low-level wind flow caused the leeward portions of the Islands to remain mostly fair.

## JULY 17-28, 1978 (FICO)

FICO entered the Central North Pacific at 16N, 140W, on July 17 with maximum sustained winds near 80 knots. It previously had peaked at 115 knots in the Eastern North Pacific east of the 140th meridian. FICO proceeded along the 16th parallel to a point due south of the South Point, Hawaii, the southernmost part of the Big Island. U.S. Air Force reconnaissance and NESS satellite imagery observed a steady increase in FICO's intensity during its travel from 140W to the position south of South Point. The RACHEL was sailing eastward north of FICO near 142W on the 18th, where she encountered 50 knot winds and swell waves of 41 feet.

Surf from the open-ocean swell generated by FICO began to rise on July 18, with some beach road flooding along the southeast coast of the Big Island when the hurricane was 500 miles to the southeast. The high surf was a combination of east-northeasterly swell from the hurricane and strong southerly swell from a southern hemisphere storm. By the next morning Civil Defense officials reported 30-foot (9.1 m) surf breaking well offshore with lesser 15- to 20-foot short-period surf doing considerable damage to beachfront homes and roads along Big Island shores. Surf of 8 to 12 feet was observed on eastern Maui by noon of the 19th, with water over roads in that area but no damage reported. Very short-period surf of similar heights reached southern Oahu and Kauai on the following day. Six people aboard the 43-foot sloop DIASTOLES were rescued by a Navy torpedo boat after the sloop lost its auxiliary power off Hanalei, Hawaii and was unable to make headway in the 50-knot winds. The 65-foot tugboat LIHUE III went aground on a reef at Kukuiula in high seas.

On July 20 the eye of the hurricane was 175 miles south southwest of South Point with maximum sustained winds of 100 knots. The CHEVRON GENOA, which had been following FICO, measured 36-knot winds, 10-foot seas, and 16-foot swells about 100 miles to the northeast. FICO had already begun moving northwestward maintaining 100-knot winds until he was 190 miles southwest of Kauai. Subsequently, FICO very slowly lost intensity. At 2100 on the 21st the TOWNSEND CROMWELL fought 35 knot winds and 15-foot seas southwest of Oahu. A strong trade wind gradient, increased by the proximity of FICO, caused gusty winds over all the islands with numerous reports of 50 knots or more, accompanied by falling trees and power outages.

FICO maintained hurricane intensity for 17 days. It was tracked by the Honolulu and San Francisco National Weather Service forecast offices (with much support from their respective NESS units) for approximately 5,000 nautical miles. On the 28th the MING LEADER found 55-knot winds northeast of Midway Island after FICO had turned extratropical. Even in dying stages FICO did not want to give up. Remnants of the storm, enmeshed in a strong cold frontal system, inflicted heavy rain and up to 40 knot winds on ships to the southeast of Cold Bay in the Aleutians on July 31.

1978: Hurricane Fico (July 17-28)					
Date/Time (UTC)	Latitude (N)	Longitude (W)	Pressure (mb)	Wind Speed (kt)	Stage/Notes
07/18/0000	16.3	142.1		80	Hurricane Cat. 1
07/18/0600	16.1	143.1		80	"
07/18/1200	16.1	144.5		80	"
07/18/1800	16.1	146.0		80	"
07/19/0000	16.1	147.4	976	75	"
07/19/0600	16.0	148.4		90	Hurricane Cat. 2
07/19/1200	15.9	150.4		90	"
07/19/1800	16.0	151.3	967	90	"
07/20/0000	16.0	152.5	963	90	"
07/20/0600	16.0	153.9		95	"
07/20/1200	16.0	154.8		95	"
07/20/1800	16.2	155.5	957	100	Hurricane Cat. 3

07/21/0000	16.3	156.6	955	100	"
07/21/0600	16.7	157.8		100	"
07/21/1200	17.1	158.7		100	"
07/21/1800	17.6	159.3		100	"
07/22/0000	18.1	160.1	965	95	Hurricane Cat. 2
07/22/0600	18.8	160.8		95	"
07/22/1200	19.4	161.8		95	"
07/22/1800	19.8	162.5	962	95	"
07/23/0000	20.3	163.0	964	95	"
07/23/0600	20.8	163.8		95	"
07/23/1200	21.2	164.7		95	"
07/23/1800	21.8	165.8	973	95	"
07/24/0000	21.9	166.6		85	"
07/24/0600	22.0	167.7		85	"
07/24/1200	22.6	168.6		85	"
07/24/1800	22.7	169.5		80	Hurricane Cat. 1
07/25/0000	23.2	170.3	976	80	"
07/25/0600	23.4	171.0		75	"
07/25/1200	23.7	171.8		75	"
07/25/1800	24.0	172.4		75	"
07/26/0000	24.2	173.0	975	75	"
07/26/0600	24.5	173.7		75	"
07/26/1200	24.6	174.2		70	"
07/26/1800	25.3	174.8		70	"

07/27/0000	25.5	175.5	990	70	"
07/27/0600	26.3	176.0		70	"
07/27/1200	27.0	176.2		60	Tropical Storm
07/27/1800	27.8	176.4		55	"
07/28/0000	28.7	177.0	997	45	"
07/28/0600	29.8	177.2		45	"
07/28/1200	31.0	176.3		45	"
07/28/1800	32.0	177.8		45	"
07/29/0000	32.7	178.0		40	"
07/29/0600	33.5	178.2		40	"
07/29/1200	34.6	177.8		40	"
07/29/1800	36.0	177.3		40	"
07/30/0000	37.4	176.1		30	Tropical Depression
07/30/0600	38.7	175.0		30	"
07/30/1200	40.3	173.5		30	"

## JULY 22-27, 1978 (GILMA)

At the same time that FICO was 215 miles southwest of Kauai on July 22, the remnants of hurricane GILMA entered the Central North Pacific at latitude 23.8N. This well-defined vortex proceeded westward between the 23rd and 24th parallels until it reached 155W, the longitude of the island of Hawaii. It then took a west-northwestward track and passed 180 miles to the north of Oahu and Kauai on the 24th. From that point the vortex moved northwestward and dissipated near 31N, 164W, on July 27.

Satellite imagery showed the vortex of GILMA centered 300 miles northeast of Hilo, Hawaii, while the eye of hurricane FICO was clearly discernible at very nearly an equal distance to the west-southwest of Lihue Kauai. The GILMA disturbance covered an area from 20N to 30N between 147W and 155W, a total of 300,000 square miles. Its wind field, as well as the associated shower and thunderstorm activity, was of great importance to numerous ships and light aircraft traversing the Central North Pacific.

## JULY 31 - AUGUST 2, 1978 (HECTOR)

The remnants of hurricane HECTOR entered the Central North Pacific near 24N and for 2 days took the same track as the vortex of GILMA had taken 9 days earlier. Since there had been little change in the general synoptic situation throughout the area during that time, it seemed that the history of this vortex would be similar to GILMA'S. But HECTOR rapidly dissipated just 300 miles northeast of the island of Hawaii on August 2.

## AUGUST 6-9, 1978 (TROPICAL DEPRESSION #10)

The next tropical cyclone in the area developed in a very active portion of the ITCZ at 11N 145W, on August 5. By the next day it was classified as a tropical depression. Since it originated in the Central North Pacific, it was given a number by the Joint Typhoon Warning Center (JTWC) at Guam--number 10. Some confusion developed since the Eastern Pacific Hurricane Center was following another tropical depression number 10 which was located in the Eastern North Pacific at the same time.

GOES-3 imagery showed the center of the depression 300 miles south-southwest of the island of Oahu. Maximum winds associated with this cyclone were never greater than 30 knots; however, it generated an extensive area of rainfall with some embedded very heavy thunderstorms. Heavy rains began on August 6 on the island of Hawaii and spread westward over the island chain through the 8th. Rainfall amounts generally averaged 3 to 5 inches.

1978: Tropical Depression 10 (August 7-9)					
Date/Time (UTC)	Latitude (N)	Longitude (W)	Pressure (mb)	Wind Speed (kt)	Stage/Notes
08/07/0600	14.1	154.8		30	Tropical Depression
08/07/1200	14.8	156.3		30	"
08/07/1800	15.8	158.3		30	"
08/08/0000	16.5	159.8		30	"
08/08/0600	16.6	161.4		30	"
08/08/1200	17.2	163.0		30	"
08/08/1800	17.3	164.2		30	"
08/09/0000	17.8	165.5		30	"
08/09/0600	18.2	167.2		30	"
08/09/1200	18.5	169.1		30	"

08/09/1800	19.0	171.0		25	"
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## AUGUST 19-21, 1978 (IVA)

IVA had a rather unusual lifespan in the Central North Pacific. On August 19 the leading edge of a massive cloud and shower shield associated with the diffuse remnants of IVA reached 140W. Twenty-four hours later the rain shield was caught in the trade winds, and its edge moved 8 of longitude to the west ahead of the parent vortex. One day later the rain shield reached the eastern shores of the Big Island and Maui with many areas reporting 5 to 6.5 inches. Little was left of IVA thereafter.

## AUGUST 20-23, 1978 (TROPICAL STORM LANE)

On August 19 tropical storm LANE was centered further west than hurricane JOHN and tropical storm KRISTY, which explains why it entered the Central North Pacific ahead of the others and out of alphabetical order. The center of tropical storm LANE reached the Central North Pacific near 14N on, August 20 with maximum sustained winds near their peak for this storm, of 50 knots. It proceeded nearly due west and gradually weakened--dying out 360 miles south-southwest of the Big Island on the 24th with no appreciable effect on island weather.

1978: Tropical Storm Lane (August 20-24)					
Date/Time (UTC)	Latitude (N)	Longitude (W)	Pressure (mb)	Wind Speed (kt)	Stage/Notes
08/20/0600	14.2	141.1		50	Tropical Storm
08/20/1200	14.2	142.5		50	"
08/20/1800	14.3	144.0		50	"
08/21/0000	14.5	144.7		45	"
08/21/0600	14.6	145.9		45	"
08/21/1200	14.4	147.1		45	"
08/21/1800	14.3	148.0		45	"
08/22/0000	14.3	149.0		40	"
08/22/0600	14.5	150.0		40	"
08/22/1200	14.5	151.0		35	"

08/22/1800	14.7	153.2		30	Tropical Depression
08/23/0000	14.6	154.5		30	"
08/23/0600	14.6	155.8		30	"
08/23/1200	14.2	157.2		30	"
08/23/1800	13.9	158.2		25	"
08/24/0000	13.9	158.9		25	"

## AUGUST 23-30, 1978 (HURRICANE JOHN)

Hurricane JOHN and tropical storms KRISTY and LANE became named storms at the same time on August 19 in the Eastern North Pacific. A GOES-3 photo depicted the interesting situation on August 27. John had reached maximum Strength with sustained winds of 90 knots on the 24th near 16N, 146W, and then steadily weakened. At the time of the photo it was 225 miles to the south-southwest of the Big Island, classified as a tropical storm with maximum sustained winds of 35 knots. It weakened to depression intensity on the morning of the 28th, was caught in the trades and then meandered west-southwestward to 17OW, where the system was last identified on August 30.

1978: Hurricane John (August 23-30)					
Date/Time (UTC)	Latitude (N)	Longitude (W)	Pressure (mb)	Wind Speed (kt)	Stage/Notes
08/23/1800	15.4	140.7		60	Tropical Storm
08/24/0000	15.5	141.8		65	Hurricane Cat. 1
08/24/0600	15.5	142.8		70	"
08/24/1200	15.8	143.9		70	"
08/24/1800	15.8	144.7		90	Hurricane Cat. 2
08/25/0000	15.9	145.4		90	"
08/25/0600	16.2	146.3		85	"
08/25/1200	15.9	147.5		85	"
08/25/1800	15.9	148.5		80	Hurricane Cat. 1

08/26/0000	15.4	148.9		50	Tropical Storm
08/26/0600	15.3	150.0		50	"
08/26/1200	15.0	150.6		50	"
08/26/1800	15.0	151.3		40	"
08/27/0000	15.1	152.5		40	"
08/27/0600	15.1	153.7		35	"
08/27/1200	14.9	154.8		35	"
08/27/1800	15.1	155.8		35	"
08/28/0000	15.3	156.9		35	"
08/28/0600	15.3	157.9		35	"
08/28/1200	15.1	159.9		35	"
08/28/1800	14.9	159.5		30	Tropical Depression
08/29/0000	14.9	160.9		30	"
08/29/0600	14.9	161.7		30	"
08/29/1200	14.8	163.2		30	"
08/29/1800	14.8	164.5		30	"
08/30/0000	14.9	166.3		30	"
08/30/0600	14.8	167.4		25	"
08/30/1200	14.8	169.0		25	"
08/30/1800	14.9	170.4		25	"
08/31/0000	15.9	171.1		25	"

## AUGUST 26-28, 1978 (TROPICAL STORM KRISTY)

KRISTY entered the Central North Pacific near latitude 21N with 45-knot winds and an area of active thunderstorms to the northeast. This storm described a pronounced sinusoidal northwestward track, while gradually weakening, but continued to be accompanied by

significant weather of concern to maritime and aviation interests. At 2315Z on August 27 KRISTY was downgraded to a tropical depression, but still affected sea and air routes to the mainland United States. It rapidly disintegrated during the next 24 hours and lost identity on August 28.

1978: Tropical Storm Kristy (August 26-28)					
Date/Time (UTC)	Latitude (N)	Longitude (W)	Pressure (mb)	Wind Speed (kt)	Stage/Notes
08/26/1800	21.3	141.3		40	Tropical Storm
08/27/0000	21.5	142.5		35	"
08/27/0600	21.5	143.5		30	Tropical Depression
08/27/1200	21.1	144.5		30	"
08/27/1800	22.1	144.9		30	"
08/28/0000	22.7	145.5		30	"
08/28/0600	22.8	146.3		25	"
08/28/1200	24.0	147.0		25	"
08/28/1800	24.4	148.6		25	"

## AUGUST 27 - SEPTEMBER 2, 1978 (TROPICAL STORM MIRIAM)

MIRIAM moved from the Eastern North Pacific into the Central North Pacific with maximum sustained winds of 55 knots, while KRISTY and JOHN were still active cyclones. MIRIAM entered at a point (13N, 140W) farther south than any of the other storms which entered from the Eastern North Pacific. On August 29 MIRIAM took a heading which threatened the Big Island of Hawaii, and public advisories were issued. But the next morning the storm abruptly changed course and turned to the southwest, eliminating the threat. MIRIAM kept its tropical storm classification until about 400 miles south to the island of Kauai; thereafter, the system decayed quite rapidly.

1978: Tropical Storm Miriam (August 27-September 1)					
Date/Time (UTC)	Latitude (N)	Longitude (W)	Pressure (mb)	Wind Speed (kt)	Stage/Notes

08/28/0000	13.1	140.0		55	Tropical Storm
08/28/0600	13.2	141.3		55	"
08/28/1200	13.5	142.8		55	"
08/28/1800	14.2	144.1		55	"
08/29/0000	15.1	145.3		50	"
08/29/0600	15.2	146.9		45	"
08/29/1200	15.3	148.2		45	"
08/29/1800	15.3	149.3		45	"
08/30/0000	15.9	150.4	1000	45	"
08/30/0600	16.0	151.6		45	"
08/30/1200	16.0	153.0		45	"
08/30/1800	15.9	154.2	1004	45	"
08/31/0000	15.9	155.4	1005	45	"
08/31/0600	15.7	156.9		45	"
08/31/1200	15.8	158.5		40	"
08/31/1800	15.3	159.9	1008	35	"
09/01/0000	14.6	161.2		30	Tropical Depression
09/01/0600	14.7	162.2		25	"
09/01/1200	14.5	164.0		25	"

## OCTOBER 18-24, 1978 (SUSAN)

With the demise of MIRIAM, the Honolulu forecast staff thought that possibly the Central North Pacific season was over. But on October 18 a suspicious area on the ITCZ southeast of Hawaii rapidly developed into a full-fledged tropical storm. This was the capricious SUSAN, the last storm of the season. SUSAN developed tropical storm strength at precisely the same location where BUD, the first storm of the season, had died (10N, 145W).

On October 21 SUSAN became one of the three most intense hurricanes on record in the Central North Pacific. Maximum sustained winds of 120 knots equaled those attained by CELESTE in August 1972.

The 120-knot winds of SUSAN and CELESTE may have been exceeded in Central North Pacific history by the 150-knot winds of typhoon/hurricane PATSY in 1959 which were also estimated by aircraft reconnaissance. However, the minimum sea level pressure of 960 mb (28.35") which accompanied one of PATSY's 150-knot reports certainly casts doubt on the validity of that wind speed estimate. The second 150-knot PATSY estimate did not give a measured sea level pressure. Sea level pressures measured or estimated during maximum winds of SUSAN and CELESTE were at or near 943 mb (27.85").

The NICKEL I ran into 50-knot northeasterlies on the 23rd more than 400 miles northeast of the eye. At that time SUSAN posed a very real threat to the Hawaiian Islands. After moving 220 miles southeast of the Big Island, SUSAN turned sharply to the southwest and disintegrated very rapidly. Once again the Islands were spared! The pressure rose more than 50 mb in 24 hours with the onset of strong upper wind shear'.

1978: Hurricane Susan (October 18-23)					
Date/Time (UTC)	Latitude (N)	Longitude (W)	Pressure (mb)	Wind Speed (kt)	Stage/Notes
10/18/1800	10.2	144.9		35	Tropical Storm
10/19/0000	10.5	145.8		45	"
10/19/0600	10.7	145.7		45	"
10/19/1200	11.2	145.9		60	"
10/19/1800	11.6	146.1		70	Hurricane Cat. 1
10/20/0000	12.3	145.9		75	"
10/20/0600	12.6	146.0		75	"
10/20/1200	12.8	146.4		85	Hurricane Cat. 2
10/20/1800	13.1	147.3		85	"
10/21/0000	13.5	148.0		90	"
10/21/0600	13.8	148.8		90	"
10/21/1200	14.2	149.8		110	Hurricane Cat. 3

10/21/1800	14.6	150.5		115	Hurricane Cat. 4
10/22/0000	14.8	151.1	954	115	"
10/22/0600	15.3	151.5		115	"
10/22/1200	16.0	152.3		110	Hurricane Cat. 3
10/22/1800	16.1	152.5		110	"
10/23/0000	16.2	152.8	996	85	Hurricane Cat. 2
10/23/0600	16.2	153.2	1007	65	Hurricane Cat. 1
10/23/1200	15.7	154.5		40	Tropical Storm
10/23/1800	15.1	155.2		30	Tropical Depression
10/24/0000	14.9	156.2		30	"
10/24/0600	14.6	156.7		30	"
10/24/1200	14.5	157.4		25	"